

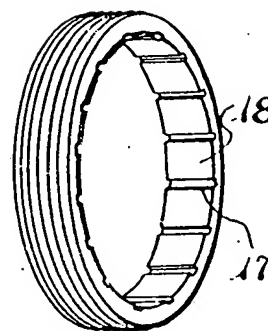
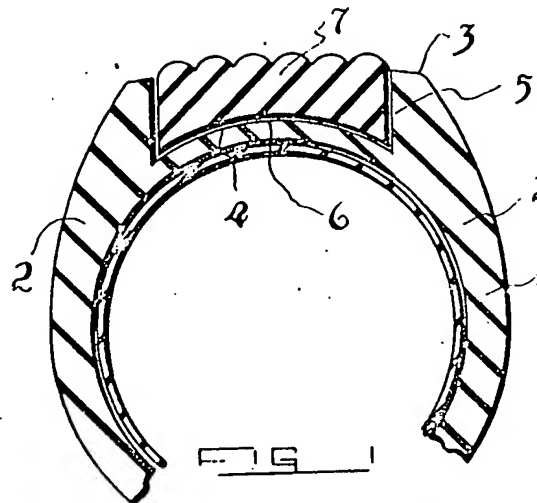
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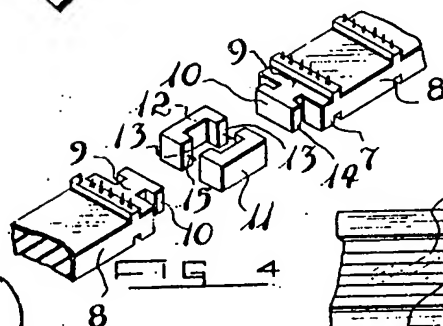
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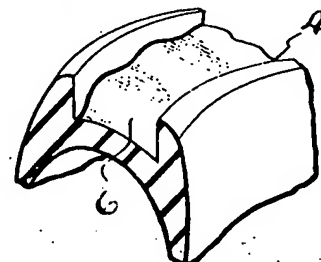
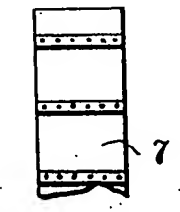
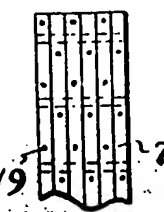
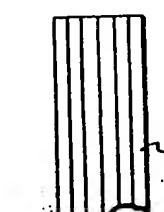
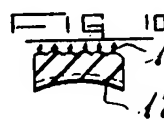
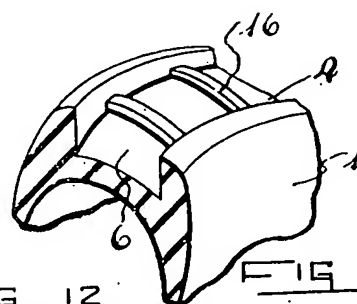
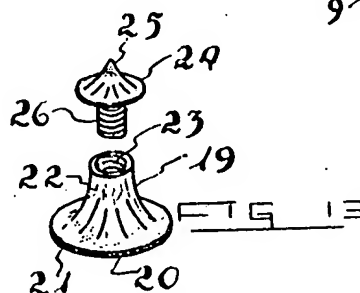
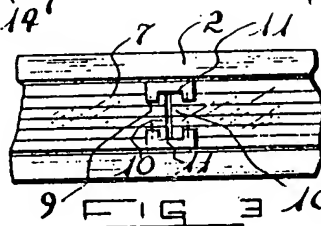
stretch then inflate



endless



with ends



547958

CANADA

THE PATENT OFFICE

PATENT No. 547,958

ISSUED OCT. 29, 1957

Tires for Automobiles and the Like

Clem S. Downey, Schreiber, Ontario, Canada

Application July 17, 1952, Serial No. 633,910

2 Claims

EXAMINER'S

DIV. 45

1 My invention relates to new and useful improvements in tires, particularly to tires used by automobiles and the like, an object of my invention being to provide a tire of the character herewithin described which includes a readily replaceable tread component.

Another object of my invention is to provide a device of the character herewith described which will enable a single outer casing to be provided with a plurality of tread forms depending upon the weather and road conditions upon which it is being used.

Still another object of my invention is to provide a device of the character herewithin described whereby the tread component can readily be renewed when worn, thus reducing the replacement cost of the tire.

Still further object of my invention is to provide a device of the character herewithin described which includes means to prevent relative rotary movement between the tread component and the outer casing.

With the foregoing objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this Specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings in which:

Figure 1 is a cross-sectional view of my tire with one form of tread component thereon.

Figure 2 is a reduced perspective view of one form of my tread component per se.

Figure 3 is a fragmentary plan view showing one method of joining adjacent ends of the tread component.

Figure 4 is a perspective exploded view of the joint shown in Figure 3.

Figure 5 is a reduced fragmentary perspective view of the outer casing showing one means to prevent slippage between the tread and casing.

Figure 6 is a view similar to Figure 5 but showing an alternative means.

Figure 7 is a fragmentary top plan view of one form of tread component.

Figure 8 is a section of Figure 7.

Figure 9 is an alternative tread form.

Figure 10 is a section of Figure 9.

Figure 11 is still another tread form.

Figure 12 is a section of Figure 11.

Figure 13 is an enlarged perspective view of one of the replaceable studs.

In the drawings like characters of reference indi-

2 cate corresponding parts in the different figures.

Conventional automotive tires and the like are normally constructed for one general purpose and whereas they may be satisfactory when used upon one particular surface, nevertheless, their efficiency deteriorates when used upon different surfaces. For example, the general purpose all weather tire, while perfectly satisfactory on concrete and gravel highways, nevertheless is extremely hazardous when used upon icy or snowy surfaces and it is usual to install tire chains or special snow gripping tires. Furthermore, when the treads of a conventional tire become worn, it is extremely expensive to replace the entire tire or alternatively, to have the tire retreaded.

The tires hereinafter to be described overcome these disadvantages, inasmuch as I have provided a replaceable tread component.

Proceeding now to describe my invention in detail, it will be seen upon reference to the accompanying drawings that I have illustrated a tire consisting of an outer casing 1 the side walls 2 whereof extend upwardly to the outer perimeter or surface 3. This perimetrical surface is recessed as at 4 circumferentially around the casing, the recess being provided with substantially vertical side walls 5 and a crowned or convex base 6. A tire component collectively designated 7 moulded from rubber or the like is formed with a cross-sectional configuration substantially complementary to the cross-sectional configuration of the recess 4. This tire component may either be formed endless as shown in Figure 2 or with ends 8 as shown in Figures 3 and 4 under which circumstances means to secure the adjacent ends together are required.

I have illustrated one form of such means in Figures 3 and 4 wherein it will be seen that the ends 8 are provided with throat portions 9 extending therefrom, said throat portions terminating in cross-bars 10 as clearly seen. Side clamp members 11 consisting of side walls 12 and intumed ends 13 are adapted to engage around the ends 14 of the cross-bars, the ends 13 of the side clamps registering against the throat 9, and in order to secure these side clamp members in position, I have provided pins 15 which are adapted to pierce the throat 9, as clearly shown in Figure 3.

Means are provided to prevent relative rotation of the tread component with relation to the outer casing such as might occur when braking or accelerating, said means comprising a plurality of transverse, spaced, bars 16 formed across the base 6 of the recess 4 formed in the outer casing 1. Recesses 17 corresponding to the bars 16 are formed

upon the inner surface 18 of the tread component so that the bars 16 may nest within the recesses when the tread component is fitted to the outer casing. An alternative means is shown in Figure 6 in which it will be seen that the base 6 of the recess 4 is formed with a wave pattern and it will be appreciated that a corresponding wave pattern will be formed upon the inner surface of the tread component.

In operation, the tire is deflated whereupon the tread component shown in Figure 2 is stretched over the tire until same nests within the recess 4 whereupon the tire is inflated thus expanding the brace of the recess against the inner surface of the tread component and holding the same firmly in position. If the tread component having the joint shown in Figures 3 and 4 is utilized, then once again the tire is deflated whereupon the tread component is laid around the tire within the recess so that the two cross-bars 10 butt together whereupon the side clamp members 11 are inserted and the pins 15 forced inwardly within the throat 9.

It will be appreciated that various forms of tread can be utilized with my tread component, examples of these tread formations being shown in Figures 7 to 12 inclusive, thus enabling tread components to be produced which are specifically designed for certain road conditions and in this connection it will be noticed that I have provided replaceable studs 19 which are particularly suitable for use upon icy surfaces. These studs 19 consist of a base portion 20 having a flange 21 with a shoulder 22 extending upwardly therefrom and centrally located thereon. This base portion is designed to be embedded within the outer surface of the tread components during manufacture and is centrally apertured as at 23 to screw threadably receive the domed portions 24 which comprise a conical surface 25 and a stud 26 whereby the dome 24 may be secured to the base 21.

Since various modifications can be made in my invention as hereinabove described, and many apparently widely different embodiments of same made within the spirit and scope of the Claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying Specification shall be interpreted as illustrative only and not in a limiting sense.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A tire for automobiles and the like comprising an outer casing having a circumferential annular recess around the outer perimeter thereof, a one piece replaceable tread component receivable within said recess, and means to prevent relative rotary movement between said tread component and said outer casing, said means including a plurality of transverse ribs across the base of said recess and a plurality of transverse recesses across the inner face of said tread component, said ribs being engageable within said recesses.

2. The device according to Claim 1 which includes means to secure adjacent ends of said tread component together, said means including a throat extending from each of said ends, a cross-bar formed upon each said end of said throat, side clamp members engaging around each side of said cross-bars, said side clamp members being provided with pins engageable within the side of each said throat.

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